I Claim:

1. A method of transmitting data as a continuous phase modulation waveform with a set of modulation indices and frequency hopping, comprising the steps of:

generating a plurality of data frames from the data;

for each data frame, coding the data into a sequence of symbols wherein the initial phase state is zero, and appending a plurality of other symbols to the sequence of symbols to form a hopping frame wherein the final phase state of the hopping frame is zero;

modulating a fixed frequency carrier with the sequence of symbols for each hopping frame with a repeated sequence comprised of the set of modulation indices; and,

transmitting the modulated hopping frame;

wherein the carrier frequency for successive hopping frames are different, thereby enabling frequency hopping transmission of the data as a continuous phase modulation waveform.

2. The method of claim 1, further comprising the step of placing a predetermined transition period between transmission of each successive hopping frame.

3. The method of claim 1, wherein the set of modulation indices includes odd and even modulation indices and the odd modulation index is used first.

4. The method of claim 1, wherein the phase states represented by the symbols in the hopping frame proceed in a repeated sequence of even state, odd state, odd state and even state.

5. The method of claim 1, wherein the sequence of symbols are interleaved.

6. A method of receiving a data signal transmitted as a continuous phase modulation waveform with a set of modulation indices over a series of different frequencies, wherein the data signal is comprised of a plurality of hopping frames, comprising the steps of:

(i) demodulating one of the hopping frames at a determined frequency and phase offset with a repeated sequence formed from the set of modulation indices to obtain a set of demodulated data symbols and a set of demodulated other symbols for each frame;

(ii) decoding the set of demodulated data symbols beginning at state "zero" to recover the data and decoding the set of other symbols to return to the zero phase state; and,

(iii) for a successive hopping frame, transitioning the receiver to a different frequency over a transition period thereby enabling the reception of the transmitted data.

7. The method of claim 6 wherein the step of demodulating one of the hopping frames further includes demodulating the hopping frame synchronously at a plurality of predetermined phase offsets.

8. The method of claim 6 wherein the step of demodulating one of the hopping frames further includes tracking and accumulating the frequency error during the hopping frame and carrying over the accumulated frequency error to a subsequent hopping frame.

9. The method of claim 6, wherein the step of demodulating one of the hopping frames includes circular demodulation.

10. The method of claim 6, wherein the set of modulation indices includes odd and even modulation indices and the odd modulation index is used first.